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09/982,794	10/22/2001	Shih-Hsiung Ni	108339-00080	8401

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EXAMINER

DIVECHA, KAMAL B

ART UNIT PAPER NUMBER

2151

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,794	NI, SHIH-HSIUNG	
	Examiner	Art Unit	
	KAMAL B. DIVECHA	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Claims 1-13 are pending in this application.

Applicant's arguments filed November 09, 2005 have been fully considered but they are not persuasive.

The examiner summarizes the applicant's arguments presented in the response filed on November 9, 2005 and addresses each argument individually.

Applicant further failed to address the 35 U. S. C. 112, second paragraph rejections presented in the non-final office action mailed on November 27, 2005.

As per applicant's argument filed as per date set forth above, the applicant argues in substance that:

- a. Claim 1-13 which was rejected under 35 U. S. C. 112, first paragraph, as failing to comply with the written description requirement, does comply with the written description as per applicant (remarks, page 2 paragraph 2).

In response to [a.]: Examiner disagrees. The passage cited by the applicant (i.e. last two sentences of paragraph 0041 of specification) states that "to prevent data misalignment from occurring, device 105 may insert eight null bytes **into the header cell** to replace the eight byte header that was removed".

Note that the **header of the cell** and **header cell** can be interpreted as two different header portions.

For example: Based on figure 4A of Scott, header 104a and 4 octet ATM header can be interpreted as header of the cell 100 and header cell and item 103a and 103b can also be interpreted as header cell and vice versa.

b. Applicants submit that the combination of Thompson and Scott simply does not teach or suggest the combination of features clearly recited in claims 1, 6 and 10. Each of claims 1, 6, and 10 in part recites determining whether the cell of the data packet contains a multiple of a predetermined number of bytes **after** the header has been removed. The Office Action admits that Thompson does not teach this element. However, the Office Action cites Col. 10, lines 40-50 and Figure 5C, item #236 of Scott as teaching determining whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed as recited in claims 1, 6, and 10. As noted above, Col. 10, lines 40-50 and Figure 5C, item #236 of Scott teaches that pad characters are added to make the AAL5 frame equal to an integer number of 48 octet cells. Col. 10, lines 54-56 and Figure 5C, item #239 of Scott also teaches that the header is extracted from the payload (**see note (i) below**). Thus, as noted above, Scott teaches on Col. 10, lines 41-58 and Figure 5 that the pad characters are added to make the AAL5 frame equal to an integer number of 48 octet cells **before** the header is extracted from the payload (**see note (ii) below**). In contrast, the present invention recites in each of claims 1, 6, and 10, determining whether the cell of the data packet contains a multiple of a predetermined number of bytes **after** the header has been removed. As such, Scott teaches away from the limitation of determining whether the cell of the data packet contains a multiple of a predetermined number of bytes **after** the header has been removed as recited in each of claims 1, 6, and 10. Therefore, Applicant respectfully asserts that the rejection under 35 U.S.C. § 103(a) should be withdrawn because neither

Thompson nor Scott, whether taken singly or combined, teaches or suggests each feature of claims 1, 6, 10.

In response to [b]: Examiner respectfully disagrees with the applicant's argument above for the following reasons:

Note:

- i. Scott discloses an improved system and method for transporting ATM information over a communications channel in an ATM network (see Abstract). Scott discloses a data packet and/or frame comprising one or more headers (see fig. 4A and fig. 4B), wherein the one or more headers include header 104a and an ATM header. In block 239, the 4-octet ATM header from the payload (fig. 4A item #91) is extracted, which is different than header 104a in frame 100.

Applicant concluded that Scott teaches on col. 10 lines 41-58 and fig. 5 that the pad characters are added to make the AAL5 frame equal to an integer number of 48 octet cells **before** the header is extracted from the payload, however Scott is explicitly referring to an ATM header included in the payload and not the header 104a of data packet 100.

- ii. Therefore applicants interpretation of adding pad characters to make frame equal to an integer number of 48 octet cells before the header is extracted from the payload is improper, whereas on the other hand claims do not differentiate and/or distinguish between the headers, they simply refer to a header.

Block 231 of figure 5C of Scott retrieves the payload from the frame 100 and processes it. According to Scott's figure 4A, payload includes 4 octet ATM header and user data PDU (please note payload does not include header 104a). So, inherently speaking, header 104a of

frame 100 has been extracted when the payload is retrieved simply because only payload 105b is retrieved for processing by inherently separating header portion 104a and payload 105b.

Block 232 of figure 5C of Scott counts the number of octets of the user data of the PDU of the payload (col. 10 L40-45; note that data in the payload is counted without the header 104a, i.e. a determination is made whether the cell i.e. payload and/or PDU of payload contains a multiple of a predetermined number of bytes after the header has been removed).

Block 236 of figure 5C adds pad characters to make the AAL5 frame equal an integer number of 48 octet cells (i.e. a determination was made in block 232 and based on that, block 236 adds pad characters to make the frame equal an integer of 48 octet cells).

Therefore the applicants interpretation of Scott teaching that the pad characters are added to make the AAL5 frame equal to an integer number of 48 octet cells **before** the header is extracted is indeed and should be interpreted as adding pad characters to make the AAL5 frame equal to an integer number of 48 octet cells **after extracting the header 104a and before extracting the ATM header 91** because of the reasons set forth above.

Further, the recited limitation “determining whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed (i.e. a determination is made whether the user data contains a multiple of a predetermined number of bytes) produces the same results as “counting the number of octets of the user data of the payload” as disclosed by Scott (col. 10 L40-42). In both situations, a determination is made whether the **user data of the payload**, which is same as cell of the data packet contains a multiple of a predetermined number of bytes, whether its after the header is removed or before the header is removed.

Therefore Examiner submits that the combination of Thompson and Scott simply does teach and suggest the combination of features recited in claims 1, 6 and 10.

The examiner summarizes **the applicant's admitted prior art (AAPA)** in response filed on November 9, 2005.

- The network adapter of Thompson automatically separates headers and data during transfer of incoming packets from adapter to the memory (remarks, pg. 5).
- The network adapter of Thompson further performs alignment of network headers by inserting pad bytes (remarks, pg. 5).
- The network adapter of Thompson provides transmission and reception of data packets to and from the network.
- For outbound transfers, the front plane controller unpacks the words from a DMA bus, looks at the first byte of the output stream, which contains a count how many pad bytes were inserted in the packet and strips off the pad bytes (remarks, pg. 6).
- Scott discloses the process of processing the payload and counting the number of octets of the user data PDU of the payload and the process wherein pad characters are added to make the AAL5 frame equal an integer number of 48 octet cells (remarks, pg. 6).

The admitted features above by the applicant covers each and every limitation of claims 1, 6 and 10. As such, the combination of Thompson and Scott would have certainly produced the subject matter and/or the invention claimed in claims 1, 6 and 10.

For the at least reasons set forth above, the rejection is maintained.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the **first paragraph of 35 U.S.C. 112**:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 6 and 10 recite the limitation of “an insertion module configured to **insert null bytes into the header of the cell** of the data packet to form a **modified header cell** of the data packet if the counter determines that the cell of the data packet does not satisfy the multiple of the predetermined number of bytes”. However, the specification merely describes a network device configured to prevent data misalignment of a data packet containing extra header bytes. The network device includes an ingress module having an input interface to receive data. A header detector configured to detect the header bytes of the cell and remove the header from the cell of the data packet is also provided on the network device. A counter determines whether the cell of the data packet contains a multiple of predetermined bytes. If the counter determines that the cell of the data packet does not satisfy the multiple of predetermined bytes, **an insertion module inserts null bytes into the cell of the data packet to form a modified cell of the data packet**. Then an extraction module removes the null bytes from the modified cell of the data

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packet when the modified cell exists the network device (see abstract, summary of the invention), hence, the above claimed limitation was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor (s), at the time the application was filed, had possession of the claimed invention.

The following is a quotation of the **second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 6 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 6 and 10 recites the limitations “header of the cell”, “header cell”, “modified header cell” and “modified cell” in the claims are unclear and lacks antecedent basis, and hence renders the claims indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 6 and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2) in view of Scott (U. S. Patent No. 6,512,773 B1).

As per claim 1, Thompson discloses a network device configured to prevent data misalignment of a data packet containing extra header bytes (col. 1 L25-38), the network device comprising: an ingress module having an input interface to receive a cell of the data packet (col. 1 L25-30, col. 11 L26-32); a header detector configured to detect a header of a cell of the data packet and remove the header from the cell of the data packet (col. 11 L51 to col. 12 L10); an insertion module configured to insert null bytes into the cell of the data packet to form a modified cell of the data packet if the CPU determines that the header/data split is not on an even byte boundary (i.e. the number of bytes contained in data portion is even, multiple of predetermined bytes is an even number or odd), and the alignment must be corrected by processor 15 by inserting null bytes into the header of the cell (col. 12 L28-36, col. 1 L25-34; col. 5 L10-15, L29-37; fig 9; col. 4 L34-37: i.e. if the header/data split is not even, pad bytes or null bytes are inserted to correct the alignment); and an extraction module configured to remove the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network device (col. 6 L35-46), however Thompson does not disclose a counter to determine whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed.

Scott, from the same field of endeavor discloses a network device comprising: an ingress module having an input interface to receive a cell of the data packet (col. 10 L15-21); an egress module having output interface to output the cells (col. 10 L27-30); a header detector configured to detect a header of the cell of the data packet and remove the header from the cell of the data packet (col. 10 L22-23, L54-55); a counter to determine and/or count the number of octets of the user data PDU of the payload; and an insertion module that adds pad characters to make the

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frame or cell equal an integer number of 48 octet cells (i.e. inserting null bytes if the frame or cell does not satisfy an integer number of 48 octet i.e. if it does not satisfy the multiple number of the predetermined number of bytes, an even number, col. 10 L40-50, fig. 5C item #236).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scott, in order to include a counter that determines whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed (i.e. a counter that counts number of bytes in the cell of the data packet), since Scott teaches and discloses a counter that counts data octets of the user data PDU of the payload and adding pad characters to make the frame equal an integer number of an even number of 48 octet cells.

One of ordinary skilled in the art would have been motivated because it would have determined and/or counted the number of bytes in a cell (Scott, col. 10 L40-50) and based on the determination it would have inserted the pad byte into the cell in order to align the headers and the cell (Thompson, col. 1 L25-38).

As per claim 6, Thompson discloses forwarding the modified cell of the data packet to an output port (col. 6 L30-46) and therefore, claim 6 is rejected for the same reasons as set forth in claim 1 above.

As per claim 10, it does not teach or further define over the limitations in claims 1 and 6. Therefore, claim 10 is rejected for the same reasons as set forth in claim 1 and 6 above.

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2. Claims 2-3, 7-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2), in view of Scott (U. S. Patent No. 6,512,773 B1), and further in view of Denton et al. (U. S. Patent No. 6,567,413 B1).

As per claim 2, Thompson in view of Scott does not explicitly disclose wherein network device comprises an aggregator (read as data transferring device) that interfaces with an Ethernet and a SPI-4 communication system.

Denton explicitly discloses a multi-protocol processor comprising data transmitting processors interfacing with an Ethernet and a SPI-4 communication interfaces (fig. 2). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Denton as stated above with Thompson in view of Scott for the purpose of interfacing an aggregator with an Ethernet and SPI-4 communication interfaces.

One of ordinary skilled in the art would have been motivated because it would performed data link and physical sub-layer processing on the egress and ingress data in accordance with a selected one of plurality of supported protocols, enabling communication of packetized data between different types of communication networks (Denton, col. 4 L5-8).

As per claim 3, Thompson in view of Scott does not disclose the system wherein the aggregator (read as data transferring device) is configured to interface between a twelve 1-Gigabit ports (read as gigabit module having 12 ports) and one 12 Gigabit/s SPI-4 uplink. Denton discloses a multi-protocol processor comprising data transmitting processors configured to interface between Gigabit Ethernet module and SPI-4 uplink module (fig. 2 item #204-#222). Therefore, it would have been obvious to a person of ordinary skilled in the art to modify Denton to configure data transferring device (path processor) to interface between 12-port GBIC module

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and one SPI-4 uplink. One of ordinary skilled in the art would have been motivated because it would have enabled communication of packetized data between egress and ingress modules or communications between the Ethernet module and the uplink.

As per claim 7-8 and 11-12, they do not teach or further define over the limitations in claim 2-3. Therefore, claims 7-8 and 11-12 are rejected for the same reasons as set forth in claim 2-3.

3. Claims 4-5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2), in view of Scott (U. S. Patent No. 6,512,773 B1), and further in view of Milway et al. (hereinafter Milway, U. S. Patent No. 6,122,279), and further in view of Yik et al. (U. S. Patent No. 6,697,873 B1).

As per claim 4, Thompson in view of Scott does not disclose a network device comprising a network switch. Milway explicitly discloses a network switch (fig. 1). Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Milway with Thompson in view of Scott, in order to include a network switch. One of ordinary skilled in the art would have been motivated because network switch are well known devices used for switching cells from a plurality of network input links to a plurality of network output links (Milway see abstract).

As per claim 5, Thompson in view of Scott and further in view of Milway discloses the network device comprising: a layer two switching module configured to build a routing table (Milway, col. 4 L4-41 and fig. 10) and to instruct the extraction module to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device (Thompson, col. 6 L35-46), however, Thompson in view of Scott and further in view of

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Milway does not disclose a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet. Yik explicitly discloses an apparatus comprising a frame-forwarding device including MAC address tables (see abstract, fig. 2 and col. 2L20-31). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Yik as stated above with Thompson in view of Scott and further in view of Milway in order to include a MAC module for transmitting the modified cell of the data packet. One of ordinary skilled in the art would have been motivated because it would have increased the performance of the network by forwarding the frames to the correct output port associated with the particular MAC address (Yik, col. 2 L20-31).

As per claim 9 and 13, they do not teach or further define over the limitations in claims 4-5. Therefore, claims 9 and 13 are rejected for the same reasons as set forth in claims 4-5.

Additional References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Sheth, Jayesh V., U. S. Patent No. 4,613,954.
- b. Kunitomo et al., U. S. Patent No. 5,101,404.
- c. Kurano et al., U. S. Patent No. 5,249,178.
- d. Elzur et al., U. S. Patent No. 6,449,656 B1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is 571-272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kamal Divecha
Art unit 2151
January 13, 2006.



ZARNI MAUNG
SUPERVISORY PATENT EXAMINER